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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,136	08/29/2003	Katherine M. Devanie	CML01148T	1154
33117	7590	04/06/2005	EXAMINER	
LARSON + ASSOCIATES PC 221 EAST CHURCH ST. FREDERICK, MD 21701			CHAMBLISS, ALONZO	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,136

Applicant(s)

DEVANIE ET AL.

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1, 2, 4, 6-8, and 10-14 in the reply filed on 3/23/05 is acknowledged. The traversal is on the ground(s) that the examiner has not given reason to justify the assertion that there are separate inventions. This is not found persuasive because the examiner states the reason in species A1, A2 – D1, D2. It would be a burden on the examiner to search each species for example to search for an L-shaped and mesh grid adhesive, a film adhesive that does not extend completely around the package perimeter and extends beyond the perimeter.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. The formal drawings filed on 8/29/03 have been approved by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 2814

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 6, 8, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellerson et al. (US 5,920,125) in view of Melton et al. (US 5,186,383).

With respect to Claims 1, 6, 8, and 11-14, Ellerson discloses a printed circuit board having on a major surface thereof a plurality of I/O pads 4 situated within an integrated circuit package 1 receiving region. A surface mount integrated circuit package 1 is soldered to the I/O pads at the receiving region. A film adhesive 8 (i.e. thermoset adhesive) situated on the printed circuit board 2 and covering the solder deposit 3, 7 and a portion of the major surface, adhesively bonding the surface mount integrated circuit package 1 to the printed stiff major panel 2. The film adhesive does not contact the plurality of I/O pads and the film adhesive is applied as a free film to the printed circuit board major surface prior to soldering the surface mount integrated circuit package to the I/O pads (see col. 3 lines 53-67, col. 4 lines 26-67, and col. 5 lines 15-20; all figures). Ellerson fails to disclose at least one solder deposit that is not a part of the plurality of I/O pads and is connected to remote pad (i.e. tack pad). However, Melton discloses at least one solder deposit 32 that is not a part of the plurality of I/O pads 22 and is connected to remote pad (i.e. tack pad made of copper) (see col. 3 lines 64-68, col. 5 lines 20-56, col. 6 lines 42-50, and col. 8 lines 1-4; all figures). Thus, Ellerson and

Melton have substantially the same environment of a chip package attached to a substrate by solder bumps. Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate solder deposit with the product of Ellerson, since the solder deposit would prevent collapse of the component against the board while preventing uneven dissolution of the interconnection bumps to obtain a more uniform spacing as taught by Melton.

With respect to Claim 2, Ellerson discloses the film adhesive having a shape with vias. Ellerson discloses the claimed invention except for a L-shaped film adhesive. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a L-shaped adhesive film for the adhesive film of Ellerson, since changing the shape of the structure is an obvious matter of design choice within ordinary skill in the art and the difference in shape of the structure does not make the device operating differently. In re Peters , 723 F.2d 891, 221 USPQ 952 (Fed. Cir. 1983). Furthermore, it is noted that in the instant specification does not describe the -L-shaped as essential or critical or the only shape that could operate the claimed invention.

5. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellerson et al. (US 5,920,125) and Melton et al. (US 5,186,383) as applied to claim 1 above, and further in view of Yoshihara et al. (US 2002/0061968).

With respect to Claims 7 and 10, it is well known in the semiconductor industry to have a film adhesive containing pigment additives and softened the adhesive by electromagnetic energy (i.e. energy associated with electric or magnetic fields) as

Art Unit: 2814

evident by Yoshihara (see paragraph 23 and 34).

Allowable Subject Matter

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach the combination of the film adhesive that does not extend completely around the package perimeter in claim 4.

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.

Conclusion

7. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (571) 272-1927.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status

Art Unit: 2814

information for unpublished applications is available through Private PMR only. For more information about the PMR system see <http://pair-dkect.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or EBC_Support@uspto.gov.

AC/April 3, 2005


Alonzo Chambliss
Primary Patent Examiner
Art Unit 2814